This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.   (Original) A method for evaluating characteristics of the ion implantation in a shallow junction formed on a semiconductor sample comprising the steps of:

measuring the sample response to a periodic excitation using an optical probe and generating first output signals;

measuring the response of the sample to reflected light from a broad band wavelength source by analyzing the change in either magnitude or phase of the light induced by reflection off the surface of the sample and generating a plurality of second output signals corresponding to different wavelengths; and

determining the energy and dose of the implant used to create the shallow junction using an algorithm which simultaneously regresses data corresponding to a combination of both the first and second output signals.

2.   (Currently Amended) A method as recited in claim [[7]] 1, wherein the first output signals are used primarily to determine the extent of the damage caused by the ion implantation while the second output signals are used primarily to determine the depth of the damage caused by the ion implantation.

3.   (Currently Amended) A method as recited in claim [[7]] 1, wherein the second output signals corresponding to a plurality of wavelengths are generated simultaneously.

4.   (Currently Amended) A method as recited in claim [[7]] 1, wherein the sample is measured with another optical probe and third output signals are generated in response thereto and the concentration of the ion implantation and the energy of the implant is evaluated based on a combination of the first, second and third output signals.

Claims 5-10. (Canceled)

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